



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/751,509

01/06/2004

Andrew F. Knight

3323

42067

7590

06/02/2005

ANDREW F. KNIGHT

6330 COLUMBIA PIKE

FALLS CHURCH, VA 22041

EXAMINER

ZEC, FILIP

ART UNIT

PAPER NUMBER

3744

DATE MAILED: 06/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/751,509

Applicant(s)

KNIGHT, ANDREW F.

Examiner

Filip Zec

Art Unit

3744

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 January 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 1-7 and 11-19 is/are rejected.
- 7) ☒ Claim(s) 8-10 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 January 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 06 January 2004.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. During a telephone conversation with B. Knight on 5/26/2005 a provisional election was made without traverse to prosecute the invention of a rechargeable cooling device, claims 1-19. Affirmation of this election must be made by applicant in replying to this Office action. Claim 20 has been withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Drawings

2. New corrected drawings in compliance with 37 CFR 1.121(d) are required in this application because the present drawings contain handwritten letters, numbers and lines. Applicant is advised to employ the services of a competent patent draftsman outside the Office, as the U.S. Patent and Trademark Office no longer prepares new drawings. The corrected drawings are required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Art Unit: 3744

4. Claims 1, 2, 12-14 and 17-19 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent 6,349,560 to Maier-Laxhuber et al. In FIG. 2, Maier-Laxhuber teaches a rechargeable cooling device (1), comprising a first reservoir (evaporator, 8) configured to contain a liquid (15), a second reservoir (9) configured to contain a vapor of said liquid (col 4, line 47), a heat exchanger (surface of the evaporator 8) connected to at least one of said first and second reservoirs; and a reusable valve (13), wherein said first reservoir is in fluid connection with said second reservoir via said reusable valve, and wherein the cooling device is configured so that when said first reservoir contains said liquid at a first pressure and said second reservoir contains said vapor at a second pressure lower than said first pressure, said heat exchanger may be made to absorb heat at least in part by opening said reusable valve and allowing said liquid to vaporize as said first and second pressures equalize (col 2, lines 6-32) and when pressures in said first and second reservoirs are approximately equal at a first temperature, and after said heat exchanger has been made to absorb heat, said cooling device may be recharged for a subsequent use at least in part by cooling said cooling device to a second temperature lower than said first temperature (col 4, lines 50-55), the refrigerant used has a vapor pressure at room temperature greater than 1 atm. (water, col 4, lines 59), wherein said second reservoir further comprises an absorbent material (14) chosen to absorb said vapor, said cooling device further comprising a third reservoir (3, see FIG. 3) connected to said heat exchanger and configured to hold a substance (4) desired to be cooled, said device further comprising a refrigerator comprising a second heat exchanger (col 3, lines 63-65) connected to at least one of said first and second reservoirs, wherein said refrigerator is removably connected to said cooling device and wherein said valve is adjustable so that a flow rate of vapor passing through said valve may be adjusted (col 4, lines

Art Unit: 3744

43-50). It is inherent to heat exchanging devices using an adsorbent (in this case zeolite), to use an outside heat exchanger for regeneration, to either heat or cool said adsorbent, causing a reverse reaction of the adsorbent inside of the reservoir in which it is contained (in this case, heating zeolite will recharge it to cool the second reservoir and condense the vapor refrigerant, which in turn, drips back to the first reservoir containing aqueous refrigerant).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 3, 4-7 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,349,560 to Maier-Laxhuber et al. Maier-Laxhuber discloses applicant's basic inventive concept, a rechargeable cooling device, comprising a third reservoir (3, FIG. 3) containing a substance desired to be cooled (4, FIG. 3), substantially as claimed with the exception of stating that the temperature of the liquid refrigerant is at room temperature prior to vaporizing, that said rechargeable cooling device is an insulated mug, wherein said third reservoir is shaped to contain no more than about 48 fluid ounces of a beverage, wherein said rechargeable cooling device is an insulated cooler having a storage volume in excess of one cubic foot, wherein said cooling volume is shaped to hold and cool at least one and not more than four 12-ounce beverage cans and wherein said second reservoir has a volume at least ten times greater than a volume of said first reservoir. The applicant should note that the change in size for the intended use is a design

Art Unit: 3744

consideration within the skill of the art, In re Leshin, 227 F.2d 197, 125 USPQ 416 (CCPA 1960). Also, Maier-Laxhuber teaches how “*no special demands are made on the size and configuration of the containers. Thus, all containers common at present (for example, vats, containers, cans, open containers, foil sacks, multilayer packaging, plastic containers, canisters, hobbicks, bottles, jugs, and so forth) which are suitable for flowable filling materials can be used, as long as the sorption apparatus can be coupled for proper operation*” (col 4, lines 6-13). Finally, since vapor takes up a lot less volume than liquid it would have been obvious to have the liquid reservoir to be much smaller than the vapor reservoir. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Maier-Laxhuber, by sizing the beverage container in order to allow for any type of beverage container to be cooled and thus diversify the product.

7. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,349,560 to Maier-Laxhuber et al., in view of U.S. Patent 4,976,112 to Roberts et al. Maier-Laxhuber discloses applicant's basic inventive concept, a rechargeable cooling device, substantially as claimed with the exception of stating the use of a pressure relief valve connected to at least one of said first and second reservoirs. Roberts shows the use of a pressure relief valve (top of 70, FIG. 1) to be old in the beverage refrigeration art. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made from the teaching of Roberts to modify the system of Maier-Laxhuber, by having a pressure relief valve in connection with one the refrigerant reservoirs in order to prevent accidental pressure build up and a possible accident (col 3, lines 15-16).

Allowable Subject Matter

8. Claims 8-10 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent 4,126,016 to Greiner, Leonard teaches a vacuum interconnect for heating and cooling unit.

U.S. Patent 6,378,326 to Maier-Laxhuber, Peter et al. teaches a sorption cooler.

U.S. Patent 6,029,457 to Neeser, Timothy Allan et al. teaches a wide mouth vacuum-insulated receptacle.

U.S. Patent 5,154,067 to Tomizawa, Takeshi et al. teaches a portable cooler using chemical reaction.

U.S. Patent 4,711,099 to Polan, George S. et al. teaches portable quick chilling device.

Art Unit: 3744

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Filip Zec whose telephone number is (571) 272-4815. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cheryl Tyler can be reached on 571-272-4834. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Filip Zec
Examiner
Art Unit 3744


CHERYL TYLER
SUPERVISORY PATENT EXAMINER

FZ